

Quest Diagnostics



The Power of Six Sigma Quality

***CDC – Quality Institute 2003
April 14, 2003***



Quest Diagnostics



Vision

"Dedicated People
Improving the Health of Patients
Through Unsurpassed Diagnostic Insights"

Values

- ❖ Quality
- ❖ Integrity
- ❖ Innovation
- ❖ Collaboration
- ❖ Accountability
- ❖ Leadership



Quest Diagnostics



Operations

- ❖ >130 Million Patient Encounters / Year
- ❖ >1,700 Patient Service Centers
- ❖ 140 Rapid Response Laboratories
- ❖ 32 Full Service Regional Laboratories
- ❖ 2 Esoteric Testing Laboratories
- ❖ >\$4 Billion Revenue
- ❖ >37,000 Employees

Our Focus





Six Sigma Quality Defined

An Accuracy Rate of 99.99966%

or

3.4 Defects Per Million Opportunities (DPMO)

Sigma	% Accuracy	DPMO	Cost of Poor Quality
6	99.9997%	3.4	< 1% of Revenue
5	99.98%	233	5 – 15% of Revenue
4	99.4%	6,210	15 – 25% of Revenue
3	93.3%	66,807	25 – 40% of Revenue
2	69.1%	308,537	Not Competitive

“Good”
Enterprises



Source: *Six Sigma* by Mikel Harry, Ph.D. and Richard Schroeder, www.6-sigma.com

What Is Six Sigma?



Virtual Perfection

- ❖ <3.4 Defects Per Million Opportunities
- ❖ Reduce Occurrences
- ❖ Reduce Process Variation

Rigorous Methodology – DMAI²C

- ❖ Define
- ❖ Measure
- ❖ Analyze
- ❖ Innovative Improvement
- ❖ Control

What Is Six Sigma?



Customer Focused

- ❖ Listen to the “Voice of the Customer”
- ❖ Define Requirements Using Customer Input

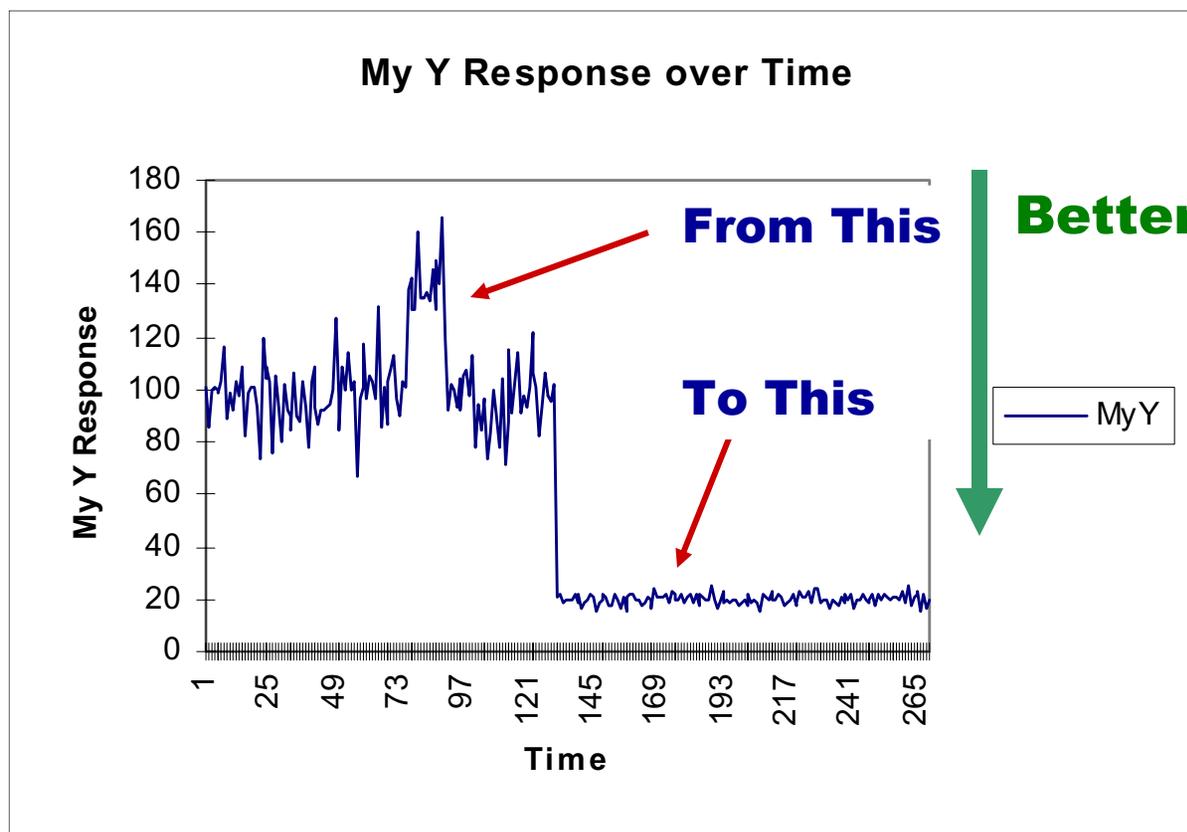
Data Driven Discipline

- ❖ Make Decisions Based on Facts and Data
- ❖ Measure, Measure, Measure



Dramatic Improvement

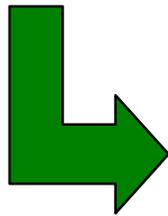
Reduce Errors *and* Variation





Our Moral Imperative

**Eliminate
Diagnostic Testing Errors
to Provide the Highest Quality
Healthcare Services for
Patients**



**Six Sigma Quality
Enables Error-Free Services
and Improves Business Performance**



Six Sigma Case Studies

Pre - Analytical

Patient Service Center Wait Times

Situation: Average wait times fine BUT wide variation produced high % of dissatisfied patients

Outcome: Achieved >85% defect reduction with no additional staffing. Workflow improvements reduced non value-added steps.

Specimen Processing Accuracy

Situation: Patient Demographic, Doctor and Billing Information Data Entry Errors

Outcome: Achieved 60% defect reduction. Process improvements include process specialization and requisition redesign



Six Sigma Case Studies

Analytical

Missing / Lost Specimens

Situation: >5 Sigma Process (<230 DPMO)

Outcome: Achieved >80% defect reduction. Tightened storage protocols by specimen type and improved tracking mechanisms

Instrument Measurement Variability

Situation: Wide range of outcomes on common tests

Outcome: Achieved >75% defect reduction. Process improvements include automated equipment performance measurement



Six Sigma Case Studies

Post - Analytical

Outbound TNP Calls

Situation: Wide variability in time frame to notify physician if test not performed

Outcome: Achieved >50% defect reduction. Process improvements include communications improvement between lab operations and client service



Six Sigma Case Studies

Collaboration

Hospital Neonatal Intensive Care Specimen Collection Errors

Situation: A collaborative project with a hospital system to assess specimen integrity and safety issues of blood collection across 3 hospitals.

Outcome: Achieved 60% defect reduction. Process improvements implemented for specimens drawn in the ER and by nurses in other key areas of the hospital.



Six Sigma & Patient Safety

Some Learnings...

❖ **The Patient Comes First**

- Focus on Needs
- Use DPMO instead of % Errors

❖ **Disciplined Improvement**

- Focus on Total System Design Rather Than Sub-Process Incremental Improvements
- Use Statistical Process Control Techniques

❖ **Measure, Measure, Measure**

- Measure the Right Things Right

❖ **Accountability**

- Clear Ownership, Monitor Progress, Take Action



Driving Six Sigma Quality

Cultural Change...

- ❖ **Senior Leadership Role**
- ❖ **Commit Talented Dedicated Resources**
- ❖ **Challenge the Status Quo**
- ❖ **Drive Patient Benefits, Not Cost Reduction**
- ❖ **Cost Reduction = An Outcome**
- ❖ **Patient Benefits = The Goal**



Quality Indicators

Baseline Metrics: Critical Defects We Measure

Laboratory Process Flow

DPMO Measures

❖ **Pre-Analytical**

- Collect the Specimen
- Transport the Specimen
- Process the Specimen

**Specimen Re-Collection, QNS
Missed Pickups, Lab Accident
Misplaced Specimens, TNP**

❖ **Analytical**

- Perform Diagnostic Tests
- Produce Test Results

**Internal/External Proficiency
Corrected/Amended Reports**

❖ **Post Analytical**

- Medical Report to Physician
- Address Physician Questions
- Produce Accurate Invoice
- Collect Payment

**Turnaround Time
Speed to Answer
Missing Information
Payer Adjustment Report**